

NETWORKS

FAQ

Q What's a virtual private network?

A A virtual private network (VPN) allows a remote computer to connect securely to a local network.

VPNs are used by businesses that want to provide access for remote workers to the corporate network and company servers. Before broadband and the mass uptake of the internet, this kind of access would have been provided by dial-in lines and modems, which are expensive to support and relatively slow.

Now everyone has internet access, a VPN is a cheaper way of achieving the same goal. They work by creating an encrypted 'tunnel' through the internet to the network to which the remote worker needs access. As the traffic is encrypted, anyone eavesdropping can't understand what's being transmitted, getting over the inherent security problem of the internet: your data is being sent over a public network and you have no idea which route it's taking or who's looking at it.

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PANASONIC BL-PA100KT

★★★★

£88 inc VAT

Where wireless refuses to work properly, powerline networking can help. The technology transmits your network data over your mains cabling, so wherever you have a power socket you have a potential network port. Panasonic is the latest company to release powerline networking kit with its BL-PA100KT. This set includes two network adaptors, making it appear to be better value when compared to rival kits such as Devolo's DLAN 200 AVdesk Starter Kit, which costs £100. Rather than using the HomePlug AV standard (200Mbit/s), Panasonic has developed its own 190Mbit/s standard.

This means the BL-PA100KT is a little different to configure to the HomePlug adaptors we've reviewed before. Each adaptor has a switch on it that lets you select whether it's a Master or Terminal. There can be only one Master adaptor on your network, and every other adaptor has to be a Terminal. To get the two to talk together, you have to press the Setup button on the Master and then the Setup button on the Terminal to join them to the same network. This process has to be repeated for each adaptor you plug in, but it's not much of a chore.

As well as joining the adaptors to the same network, it turns on encryption, too. This means that you never have an unprotected network. With HomePlug, there's no need for initial configuration, as all adaptors can talk to each other. However, the link isn't encrypted, so there's a good chance that your next-door neighbour could join your network by plugging in their own HomePlug adaptor. To encrypt a HomePlug network, each adaptor has to be configured with software and given the same password. From



this perspective, Panasonic's BL-PA100KT kit is considerably easier to configure and it's secure straight out of the box. The HomePlug standard could be improved with an easy configuration like this.

Panasonic's BL-PA100KT has a 10Mbit/s slower stated speed than HomePlug AV, but as stated speeds don't mean much, we were still expecting similar actual performance results. Copying a 100MB file three times over the network results gave us good throughputs, but Devolo's DLAN 200 AVdesk Starter Kit trumped this with a throughput of 38.1Mbit/s. The BL-PA100KT's performance sat directly in the middle of what we would expect from HomePlug 85Mbit/s adaptors and HomePlug AV adaptors.

Panasonic's BL-PA100KT has a lot going for it.

Its performance is certainly good enough for web browsing and sharing the occasional file. The price is also attractive and, if you just have one PC out of wireless range that you need to connect to your router, it's good value. That said, Devolo's DLAN 200 AVdesk Starter Kit is only £12 more expensive, has better performance and, as it uses a common standard, you'll be able to buy new adaptors to work with it more easily should you want to expand your network.

David Ludlow

SUMMARY

- ✓ Good value
- ✓ Easy to configure
- ✗ Not HomePlug compatible

POWERLINE NETWORKING Two 190Mbit/s powerline network adaptors with Ethernet port
PART CODE BL-PA100KT
SUPPLIER www.lambdatek.com
DETAILS www.panasonic.co.uk

PERFORMANCE (see page 58)



Also consider...

BUFFALO Wireless G Broadband ADSL2+ Modem Router

★★★★★

£37 inc VAT

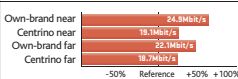


If all you're after is a way of sharing

your ADSL connection wirelessly, this router is amazing value. Its performance with our Centrino notebook was excellent and we got very good range from it. It's a little tricky to set up, however, as the web interface is quite messy.



WIRELESS ADSL ROUTER 802.11g (54Mbit/s), 4x 10/100 LAN ports, WAN port (ADSL2+ modem), UPnP **PART CODE** WBM-R-G54 **SUPPLIER** www.buffalo-tek.com **DETAILS** www.buffalo-technology.com
✓ Good all-round performance; cheap ✗ Fiddly setup
FULL REVIEW Jun 2007



NETGEAR RangeMax Next Wireless Router

★★★★★

£89 inc VAT



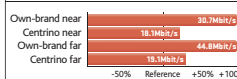
It might be a little fiddly to set up, but Netgear's RangeMax

Next Wireless Router provides excellent performance and range when used with its own adaptors. Centrino performance wasn't quite as good, but the range was still excellent.

Its price is very competitive, and there's an equally good ADSL version of the router, too.



WIRELESS ROUTER Draft 802.11n (270Mbit/s), 4x 10/100 LAN ports, WAN port, UPnP **PART CODE** WNR834B **SUPPLIER** www.lambdatek.com **DETAILS** www.netgear.com
✓ Fast performance with own-brand adaptors ✗ Mediocre Centrino performance
FULL REVIEW Jun 2007



BILLION BiGuard S5

★★★★★

£182 inc VAT



With more people either working from home or away from the office, providing secure remote access is an increasing challenge. With its BiGuard S5, Billion believes it has the ideal answer.

The small appliance is a fully fledged router, but it's also a virtual private network (VPN) gateway that provides a secure connection to your network. We've seen similar devices before, but the S5 aims to be the simplest product for end-users, as it requires no software to be installed or configured on a remote PC. Instead, users log on to the BiGuard's webpage, which gives them access to only the services and remote access they have permission to use.

You might expect a product such as this to be fiendishly difficult to configure, but it was easier than we expected, and there's a detailed manual provided in the box, too. At its heart, remote connections are granted via the Network Extender, Transport Extender, or individual applications.

The Network Extender is the easiest to understand, as it joins a remote PC to your local network as though it was directly connected. The connection is secured by SSL (the same encryption standard used for secure websites), and a remote PC is capable of doing everything that a local one can do, down to accessing shared folders, using servers and accessing email.

Applications installed on the remote PC that need access to a specific server, such as database clients, will run just as if the computer were on the local network, too. It's easy for a remote user, as once they've logged on to the router they just need to click the Network Extender button and all the necessary software is installed over the web.

Application connections are also quite easy to understand, as they provide access to a specific application or service. The BiGuard has a list of eight supported services, including FTP, web, file sharing and remote control using VNC. Just create a new application, give it a name, choose the service you want to run and then enter the IP address where the service is running.

The reason for the relatively low number of services is that applications are all run from a web browser without the remote user having to install any software. Once a user is logged on to the system, they're presented with a list of applications to which they have access. Selecting one, such as a



remote VNC session, loads a new Window which connects and provides the relevant form of remote access. Without any knowledge of how the system works or what software they're using, a user is given the level of access they need.

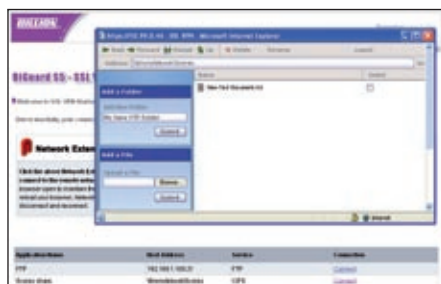
There are bound to be some services that aren't covered by Applications and where you don't want a user to have full network access with Network Extender, which is where the Transport Extender comes in. This lets you configure the precise services and computers you want to allow access to, such as a database. You must configure this manually and enter the IP address and port numbers of the service to which you want to grant access. When users select Transport Extender after they've logged on, the services are opened up. Running the relevant application, such as a database client, then connects and works just as if the user were on your local network.

For added security, you can choose who has access to what by creating users and groups. For example, you can configure the BiGuard S5 so one user only has access to an FTP server through an application you created; a more advanced user that you trust can be given access to the Network Extender so they have full access to the network.

While this gives you flexibility over who connects to what, it's a little tiresome to set up. You can say which applications belong to a group, but users added to that group aren't automatically given access to these applications. You cannot configure a group with default access permissions to the Network Extender or Transport Extender. Instead, you have to configure each user manually, choosing which applications and services you want them to access. Neither can you configure the Transport Extender to allow services based on the user; you can set only one Transport Extender configuration that all users with access to it use.

These are minor complaints, though. The BiGuard S5 is the easiest VPN gateway we've seen. Its detailed control means you can choose to open up your network as you see fit, with selected applications for less trusted users who don't require full access, and full network access for those users you do trust. With no client software required – just a web browser and a web address – this is an incredibly easy system to use. The BiGuard S5 is an excellent choice for the small business that is serious about secure remote access.

David Ludlow



▲ The webpage gives a user access only to the services and applications they have permission to use. Applications are particularly powerful, as they all run from within the browser without requiring additional software to be installed

SUMMARY

- ✓ No client software needed
- ✓ Highly configurable
- ✗ No group permissions

VPN APPLIANCE Four 10/100 Ethernet ports, one WAN port
PART CODE BiGuard S5
SUPPLIER www.microwarehouse.co.uk
DETAILS www.billion.com

CHOOSING A... VoIP Provider

SERVICE TYPE: PC

COST PER MONTH: Free

FREE CALLS: Other users of same service only

STANDARD TELEPHONE CALLS: From around 1p per minute

1 You need to choose the kind of service that works best for you.

An application with the minimum specifications as listed above requires a computer in order to work. This means you can install it on a notebook and carry it around with you, which is handy for travellers. You can get applications such as this from Skype, Microsoft, Tiscali and Tesco. If you're looking for a replacement home phone, you need to sign up for a fixed VoIP line instead, such as that provided by Vonage or BT.

2 With an application on your PC, you'll be able to see when your friends are online and make free

phone calls to any user of the same service anywhere in the world. If you want to call traditional landlines, you'll need to buy credits, such as SkypeOut. Call costs vary between countries, so check the current pricing and pick the service that provides you with the best deal. Most developed countries should cost you just 1p per minute or thereabouts.

If you want to receive phone calls, you'll need to buy a telephone number, such as with SkypeIn. This usually results in a monthly charge.

3 A fixed VoIP line works like a traditional phone. A basic service

will cost around £8 per month, but you'll get a telephone number and free UK landline calls, too. You'll also get free VoIP calls to any user of the same service, although it's hard to tell who does use it as you just dial normal telephone numbers and they give no indication of which service is being employed. Pick the service that best fits your needs; if you make a lot of foreign calls, you should go with the service that offers the cheapest calls to the countries you call most often.

4 A fixed VoIP line should come with a telephone adaptor so you

can use your existing telephone and answerphone with it. Look for an adaptor that will also connect to your existing telephone line, so your friends can still call you without having to learn a new number. Your old line is also useful as a backup and for making emergency calls.